No. 858,218. PATENTED JUNE 25, 1907.

E. ROSENVALL.

LOADING APPARATUS.

APPLICATION FILED NOV. 6, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

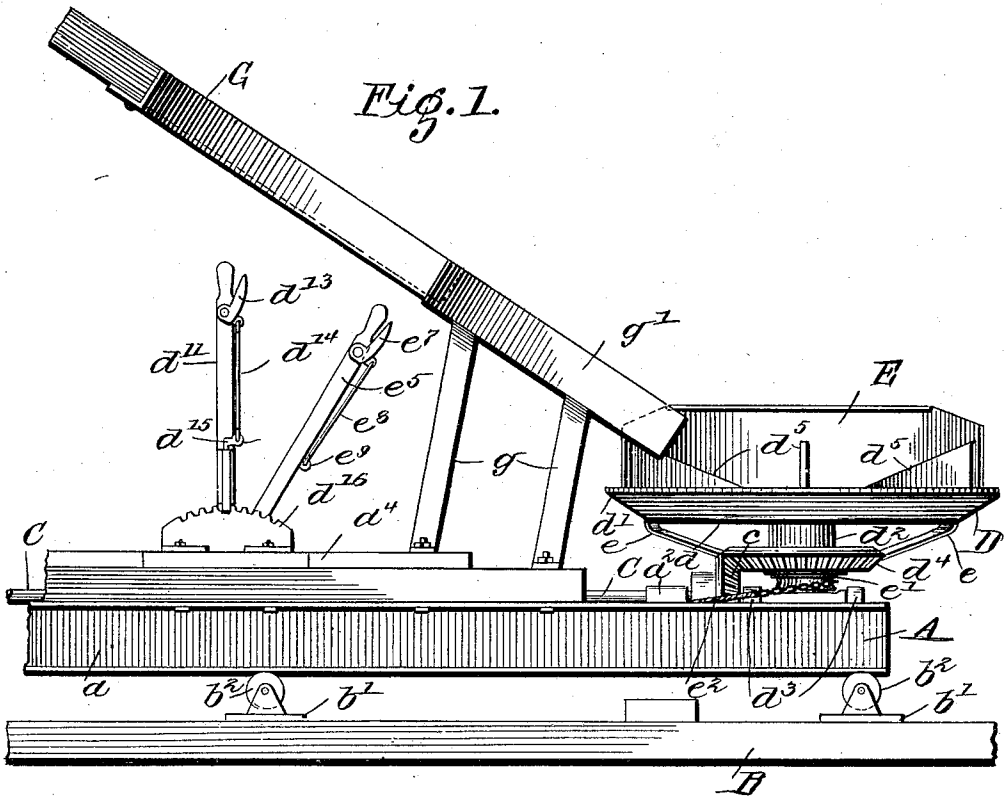
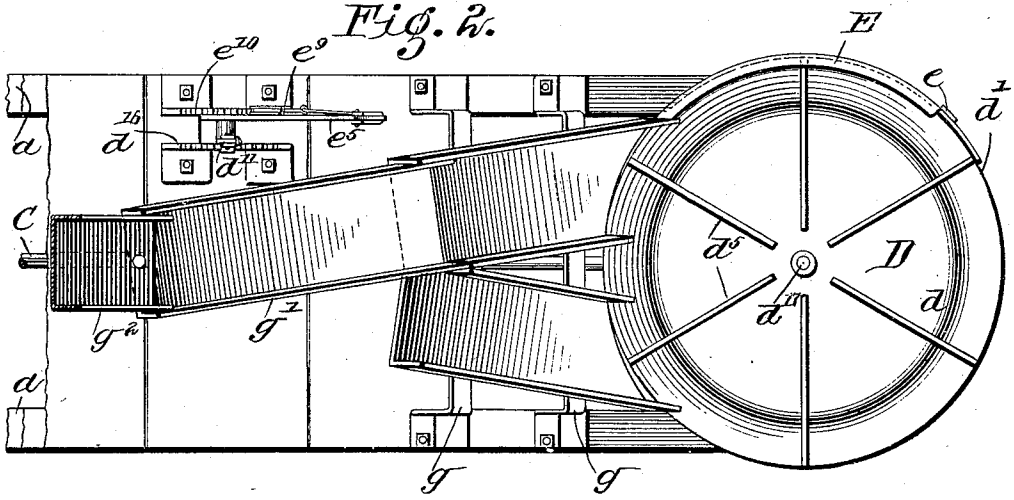



Fig. 2.




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2 SHEETS—SHEET 2.

Fig. 3.

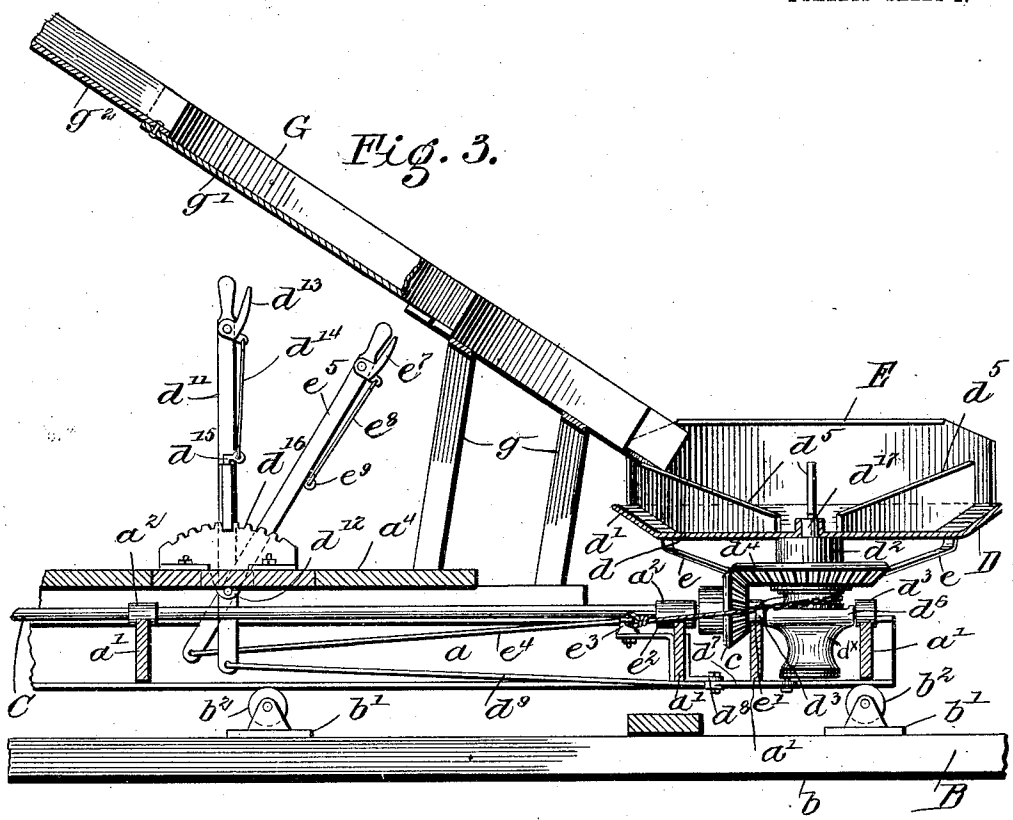
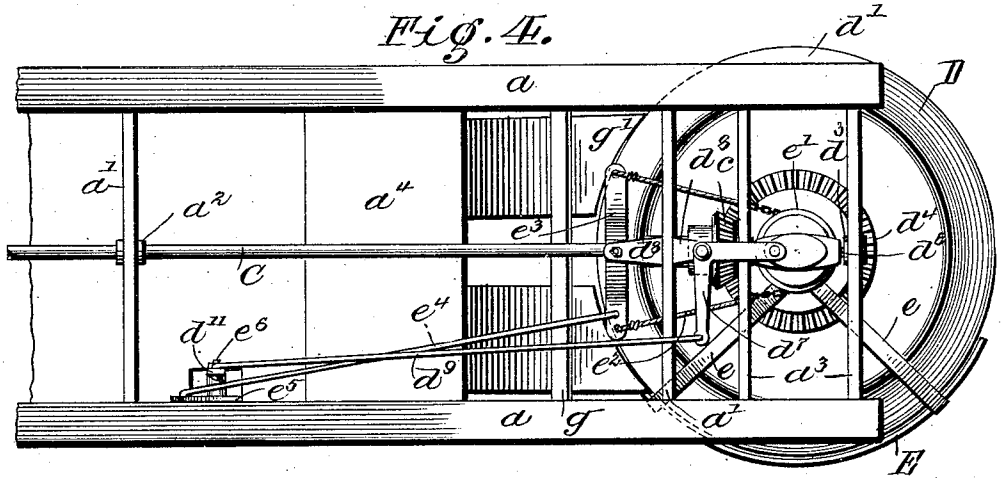


Fig. 4.



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# UNITED STATES PATENT OFFICE.

EMIL ROSENVALL, OF SALT LAKE CITY, UTAH.

## LOADING APPARATUS.

No. 858,218. Specification of Letters Patent. Patented June 25, 1907.

Application filed November 6, 1906. Serial No. 342,232.

*To all whom it may concern:*

Be it known that I, EMIL ROSENVALL, a citizen of the United States, and a resident of Salt Lake City, in the county of Salt Lake and State of Utah, have made certain new and useful Improvements in Loading Apparatus, of which the following is a specification.

My invention is an improvement in loading apparatus, and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

My invention is an improvement on the device shown and described in my copending application Serial 264,246, filed June 8, 1905.

Referring to the drawings forming a part hereof, Figure 1 is a side view of a part of the loading apparatus provided with my improvement. Fig. 2 is a top plan view thereof. Fig. 3 is a central longitudinal section; and Fig. 4 is a bottom plan view.

The present embodiment of my invention comprises a carriage A, composed of the longitudinal members $a$, connected by cross members $a'$, and movable upon a track B, comprising the rails $b$, having secured thereto at intervals brackets $b'$, provided with wheels $b^2$, upon which rest the longitudinal members of the carriage.

A shaft C is journaled longitudinally of the carriage at the center thereof, in suitable bearings $a^2$, and is provided at the end thereof with a bevel gear $c$ for a purpose to be hereafter described. The shaft C may be driven in any suitable manner, not shown, and mechanism similar to that set forth in my above mentioned application, may be connected with the shaft to drive the carriage backward and forward upon the track.

A hopper D comprising a circular table $d$, provided with the peripheral flange $d'$, has at the center thereof a downwardly projecting sleeve $d^2$, provided at its lower end with a bevel gear $d^4$ meshing with the bevel gear $c$ upon the shaft C, and the sleeve is journaled upon a shaft $d^{17}$ provided with trunnions $d^6$ engaging bearings $d^3$ upon the cross members $a^1$ connected with the carriage and with an enlarged hub portion $d^\times$ at the lower end thereof.

A crank arm $d^7$ is pivoted to a bracket $d^8$ on the carriage, and one of the arms thereof is connected with the hub portion at the lower end of the shaft $d^{17}$ and eccentrically with respect to the center of the shaft the other arm being connected by a link $d^9$ with the lower end of a lever $d^{11}$ pivoted as at $d^{12}$ to the floor $a^4$ of the carriage. The upper end of the lever is provided with a grip $d^{13}$ connected by a link $d^{14}$ with a tooth $d^{15}$ slidably mounted on the lever and engaging the teeth of a rack $d^{16}$, whereby to retain the lever in its adjusted position.

It will be evident from the description that by moving the lever $d^{11}$, the crank arm $d^7$ will be rocked upon its pivot, thus rocking the shaft $d^{17}$ on its trunnions $d^6$, whereby to swing the shield on an axis parallel to the longitudinal center of the carriage and parallel to a diameter of the table.

The hopper D is provided on its upper surface with a plurality of radial vanes $d^5$, and adjacent to its periphery a shield E is supported by bracket arms $e$ connected with a pulley $e'$, journaled on the sleeve $d^2$ between the bevel gear and the trunnions. A chain or cable $e^2$ passes around the pulley, and the ends of the chain are connected to the ends of a rock lever $e^3$ pivoted upon the bracket $d^8$ before described, and rocked by means of a link $e^4$, connected with the lower end of a lever $e^5$ pivoted at $e^6$ to the floor of the carriage, and having upon its upper end a grip $e^7$ connected by a link $e^8$ with a tooth $e^9$ slidably mounted on the lever and engaging the teeth of a rack $e^{10}$, whereby to retain the lever in its adjusted position. When the lever $e^5$ is moved, the rock arm $e^3$ is rocked upon its pivot, thus causing the chain or cable to turn the pulley, whereby to swing the shield from side to side of the carriage.

A plurality of troughs G, delivering to opposite sides of the table or hopper, is arranged above the carriage, being supported by brackets $g$. A spout $g'$ pivoted to the end of the delivery chute $g^2$, is arranged to swing from side to side whereby to deliver to either trough.

In operation, the coal or grain to be loaded, passes down the chute G upon the circular table, which is rotated by means of the shaft C. The rotation of the table or hopper throws the grain from the side thereof, into different parts of the car, and by adjusting the inclination of the table to the carriage, and the position of the shield, the grain or coal may be thrown up or down, as may be desired. Any suitable mechanism may be provided for traversing the carriage upon

the track, but since such mechanism forms no part of my invention, I have not deemed it necessary to describe the same.

I claim:

1. An apparatus of the class described, comprising a track, a carriage movable upon the track, bearings arranged longitudinally of the carriage, a vertical shaft having trunnions engaging the bearings, a circular table having a sleeve journaled on the shaft, the upper face of the table being provided with radial vanes, and the lower end of the sleeve being provided with a bevel gear, a shaft journaled longitudinally of the carriage, a bevel gear on the shaft meshing with the bevel gear of the sleeve, a crank arm pivoted to the carriage and having one of its arms connected with the lower end of the vertical shaft, means connected with the other arm for rocking the shaft upon its trunnions, whereby to incline the table with respect to the carriage, a pulley journaled on the vertical shaft between the sleeve and the trunnions, bracket arms connected with the pulley, a shield at the periphery of the table and connected with the bracket arms, a rock arm pivoted on the carriage, a chain having its ends connected with the ends of the rock arm and passing around the pulley, means connected with the rock arm for rocking the same, whereby to swing the shield, and a chute delivering to the table.

2. An apparatus of the class described, comprising a track, a carriage movable upon the track, bearings arranged longitudinally of the carriage, a vertical shaft having trunnions engaging the bearings, a circular table having a sleeve journaled on the shaft, the upper face of the table being provided with radial vanes, and the lower end of the sleeve being provided with a bevel gear, a shaft journaled longitudinally of the carriage, a bevel gear on the shaft meshing with the bevel gear of the sleeve, a crank arm pivoted to the carriage and having one of its arms connected with the lower end of the vertical shaft, means connected with the other arm for rocking the shaft upon its trunnions whereby to incline the table with respect to the carriage, a shield at the periphery of the table, and means for swinging the shield on a center coinciding with the center of the table.

3. An apparatus of the class described, comprising a track, a carriage movable upon the track, bearings arranged longitudinally of the carriage, a vertical shaft having trunnions engaging the bearings, a circular table having a sleeve journaled on the shaft, the upper face of the table being provided with radial vanes, means engaging the sleeve for rotating the table, a crank arm pivoted to the carriage and having one of its arms connected with the lower end of the vertical shaft, and means connected with the other arm for rocking the shaft upon its trunnions, whereby to incline the table with respect to the carriage.

4. An apparatus of the class described, comprising a track, a carriage movable upon the track, bearings arranged longitudinally of the carriage, a vertical shaft having trunnions engaging the bearings, a circular table having a sleeve journaled on the shaft, the upper face of the table being provided with radial vanes, means connected with the shaft for rocking said shaft upon its trunnions whereby to incline the table with respect to the carriage, a shield arranged adjacent to the periphery of the table, and means for swinging the shield from side to side of said table.

5. An apparatus of the class described, comprising a track, a carriage movable upon the track, a circular table mounted at one end of the carriage, the upper face thereof being provided with radial vanes, means for rocking the table upon an axis parallel with the longitudinal center of the carriage, a shield arranged at the periphery of the table, and means for swinging the shield upon a center coinciding with the center of the table.

6. An apparatus of the class described, comprising a track, a carriage movable upon the track, a rocking table at one end of the carriage and provided on its upper face with radial vanes, and means for rocking the table upon an axis parallel to the longitudinal center of the carriage.

7. In apparatus of the class described, a movable carriage, a circular table at one end of the carriage, means for feeding material to the table, means for rotating the table, and means for swinging the table on an axis parallel with the longitudinal center of the carriage and with a diameter of the table.

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Witnesses:
E. P. SEARS,
LOUIS W. NIEPAG.